

Application # 09/756,590
RCE and Preliminary Amendment dated November 2, 2005
Reply to Final Office Action dated June 2, 2005

PATENT
P-4993

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-38 (cancelled)

39. (currently amended) A method of separating at least one target component from a biological sample, said method comprising
- a. placing said biological sample into a separation container, said separation container comprising a focusing device, a first set of selection microbeads and a second set of selection microbeads, said first set of selection microbeads having at least one target affinity binding agent bound to their surfaces, said at least one target affinity binding agent having a binding affinity for said at least one target component within said biological sample, said second set of selection microbeads having a different density than said first set of selection microbeads and having at least one different affinity binding agent bound to their surfaces, said at least one different affinity binding agent having a binding affinity for a component other than said target component within said biological sample, said focusing device having a specific density substantially equal to the density of said first set of selection microbeads, an axial bore passage and being capable of vertical movement within said separation container upon centrifugation;
 - b. centrifuging said separation container containing said biological sample to densitometrically separate components of said sample into layers such that separation of said first set of selection microbeads and said second set of selection microbeads is induced, wherein a target layer comprising said first set of selection microbeads bound to said at least one target component is located within said axial bore passage of said focusing device, ~~and wherein said second set of selection microbeads and said components other than said at least one target component of said biological sample are substantially absent from said axial bore passage of said focusing device after centrifugation;~~ and

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- c. aspirating said elongated target layer to remove said at least one target component from said separation container.
40. (previously presented) The method of claim 39, further comprising mixing said biological sample with said first set of selection microbeads and said second set of selection microbeads prior to centrifugation.
41. (previously presented) The method of claim 40, wherein said separation container is a cylindrical, closed-end tube with an inner surface, and said focusing device having an outer surface that complements said inner surface of said tube.
42. (previously presented) The method of claim 41, wherein said biological sample is blood.
43. (previously presented) The method of claim 42, wherein said focusing device comprises a single bore axial passage.
44. (previously presented) The method of claim 43, wherein said selection microbeads of said first set have a density of between about 1.00 g/cc and about 1.06 g/cc.
45. (previously presented) The method of claim 44, wherein said selection microbeads of said second set have a density selected from the group consisting of greater than about 1.06 g/cc, less than about 1.00 g/cc and combinations thereof.
46. (previously presented) The method of claim 45, wherein said selection microbeads of said second set have a density of greater than about 1.06 g/cc.
47. (previously presented) The method of claim 46, wherein said first set of selection microbeads and second set of selection microbeads each comprise at least one antibody.
48. (previously presented) The method of claim 47, wherein said antibody of said second set of selection microbeads binds to the surface of normal white blood cells.
49. (previously presented) The method of claim 48, wherein said antibody of said first set of selection microbeads binds to the surface of cells other than said normal white blood cells.

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50. (previously presented) The method of claim 49, wherein said cells other than normal white blood cells are selected from the group consisting of cancer cells and fetal cells.
51. (previously presented) The method of claim 40, wherein said container is a rectangular, closed end container with an inner surface, said focusing device having an outer surface that complements said inner surface of said rectangular container.
52. (previously presented) The method of claim 51, wherein said focusing device is ribbed such that one or more axial passages exist in said focusing device.
53. (previously presented) The method of claim 52, wherein said biological sample is blood.
54. (previously presented) The method of claim 53, wherein said selection microbeads of said first set have a density of between about 1.00 g/cc and about 1.06 g/cc.
55. (previously presented) The method of claim 54, wherein said selection microbeads of said second set have a density selected from the group consisting of greater than about 1.06 g/cc, less than about 1.00 g/cc and combinations thereof.
56. (previously presented) The method of claim 55, wherein said selection microbeads of said second set have a density of greater than about 1.06 g/cc.
57. (previously presented) The method of claim 56, wherein said first set of selection microbeads and second set of selection microbeads each comprise at least one antibody.
58. (previously presented) The method of claim 57, wherein said antibody of said second set of selection microbeads binds to the surface of normal white blood cells.
59. (previously presented) The method of claim 58, wherein said antibody of said first set of selection microbeads binds to the surface of cells other than said normal white blood cells.
60. (previously presented) The method of claim 59, wherein said cells other than normal white blood cells are selected from the group consisting of cancer cells and fetal cells.